

Managing Energy Consumption: Solutions for Users

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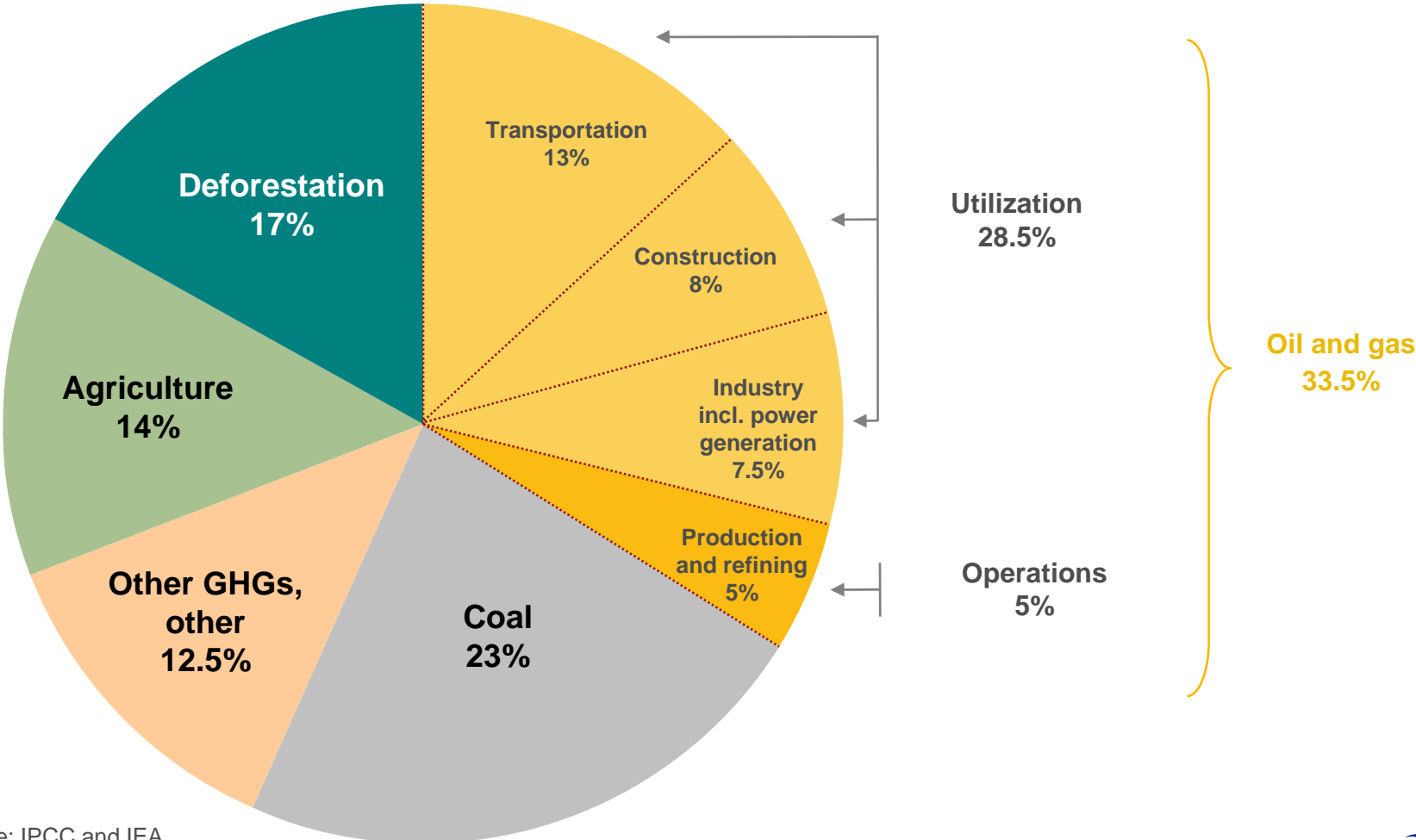
Reasons to manage energy consumption

- ▶ Reduce energy demand to help to narrow the supply/demand imbalance

- ▶ Help to tackle climate change by reducing greenhouse gas (GHG) emissions

Greenhouse gases

49 billion TCDE*

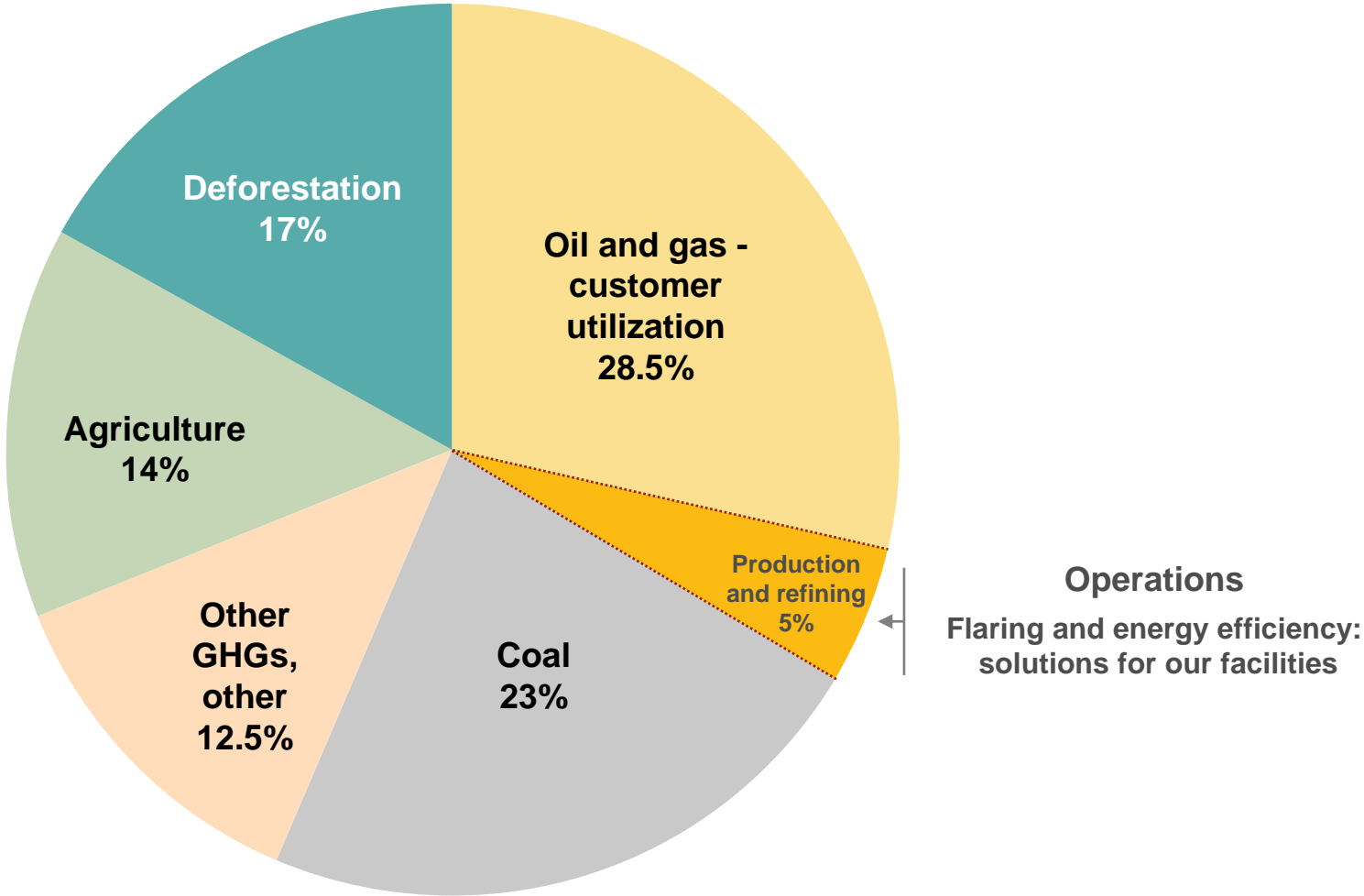


Source: IPCC and IEA.

* Tons of carbon dioxide equivalent in 2004.



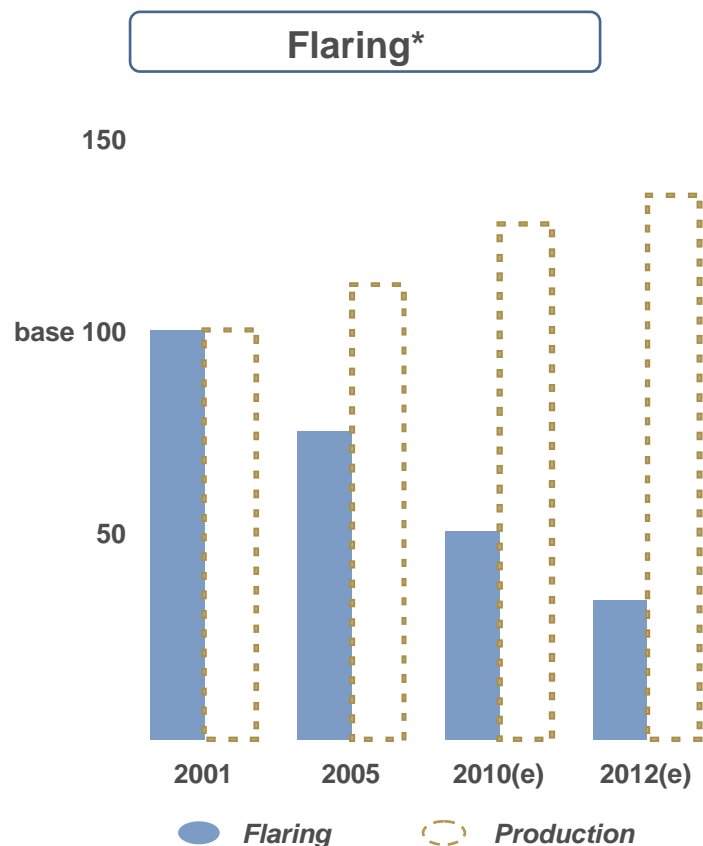
Oil and gas operations: what Total can do



Source: IPCC and IEA.



Continue to reduce flaring and increase production



- ▶ Flaring accounts for 30% of Total's GHG emissions
- ▶ No continuous flaring for new projects since 2001
- ▶ On existing fields:
 - Improved measures
 - Dedicated team
 - Technical and economic assessment of projects
 - Systematic efforts to obtain revenue from gas
- ▶ Discussions with partners and host countries

**Objective: halve flaring in 2012
from 2005 levels**

* Reduction in flaring by Total-operated oil and gas production facilities (total project) compared to Total's production growth targets, in an environment of Brent at \$60 per barrel.

Enhance energy efficiency at our production sites worldwide

Four avenues

► Optimise operating conditions

- Automated process management
- Real-time optimisation of utility networks, which account for 30% of the energy consumed in a refinery
- Program to monitor and control furnaces and boilers: fouling, burner misadjustment
- Infrared photography
- Maintenance of bleed valves, etc.

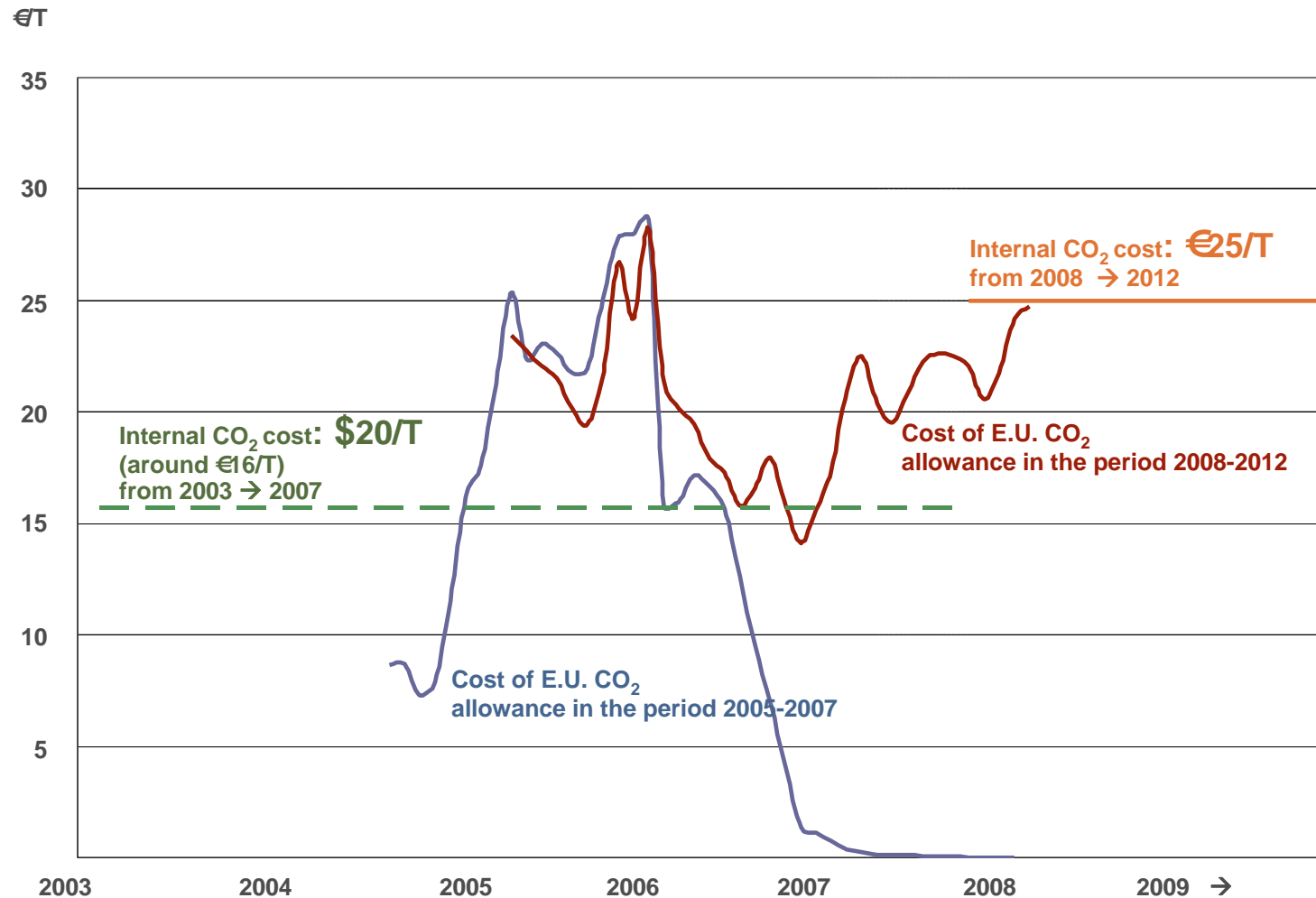
► A policy of audits and continuous improvement

- Improve heat exchanger networks
- Cogeneration units that run on natural gas or other fuels

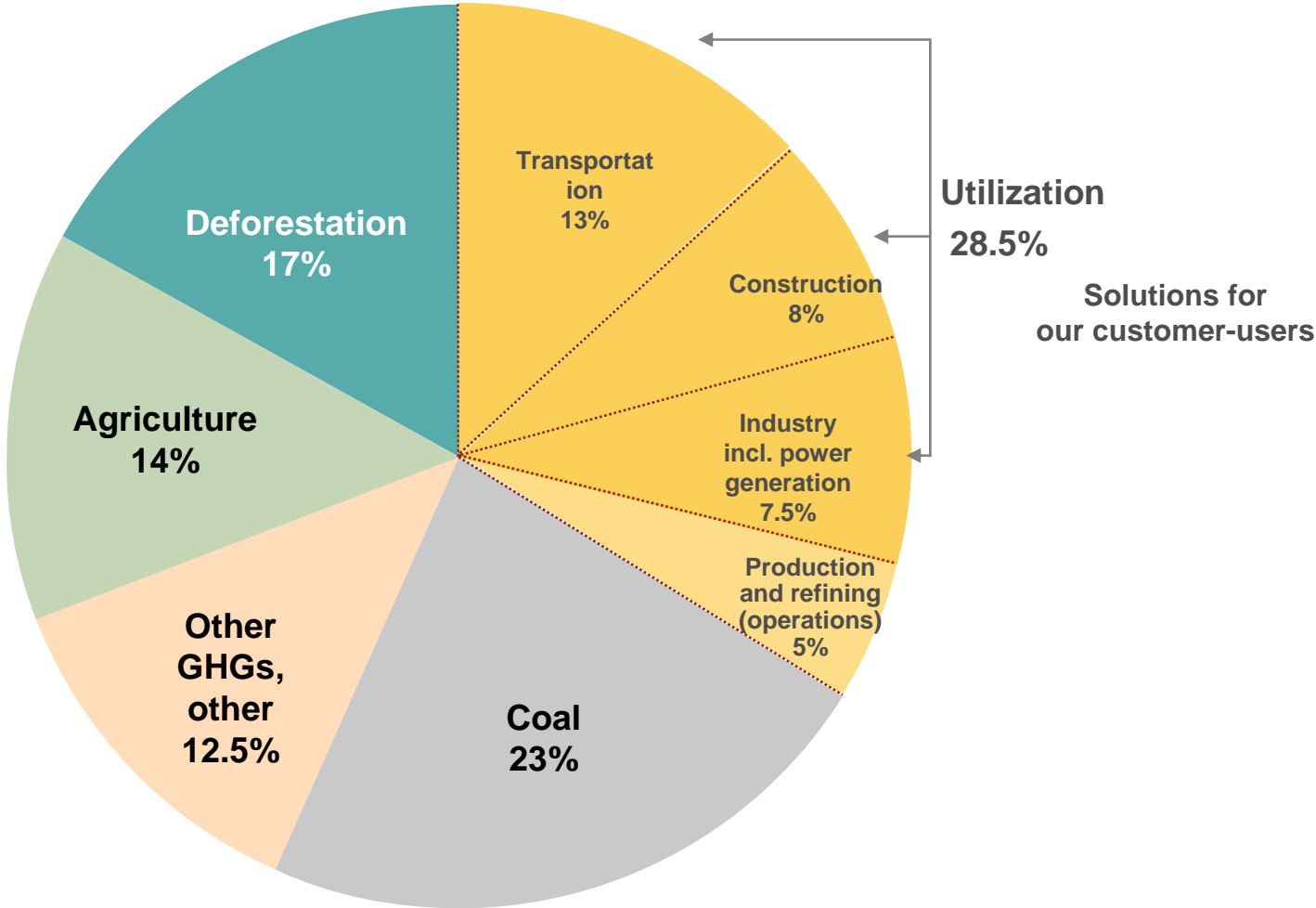
► Spending to improve unit efficiency

► R&D to select the most effective technologies

CO₂ issue: factored into all new projects since 2003



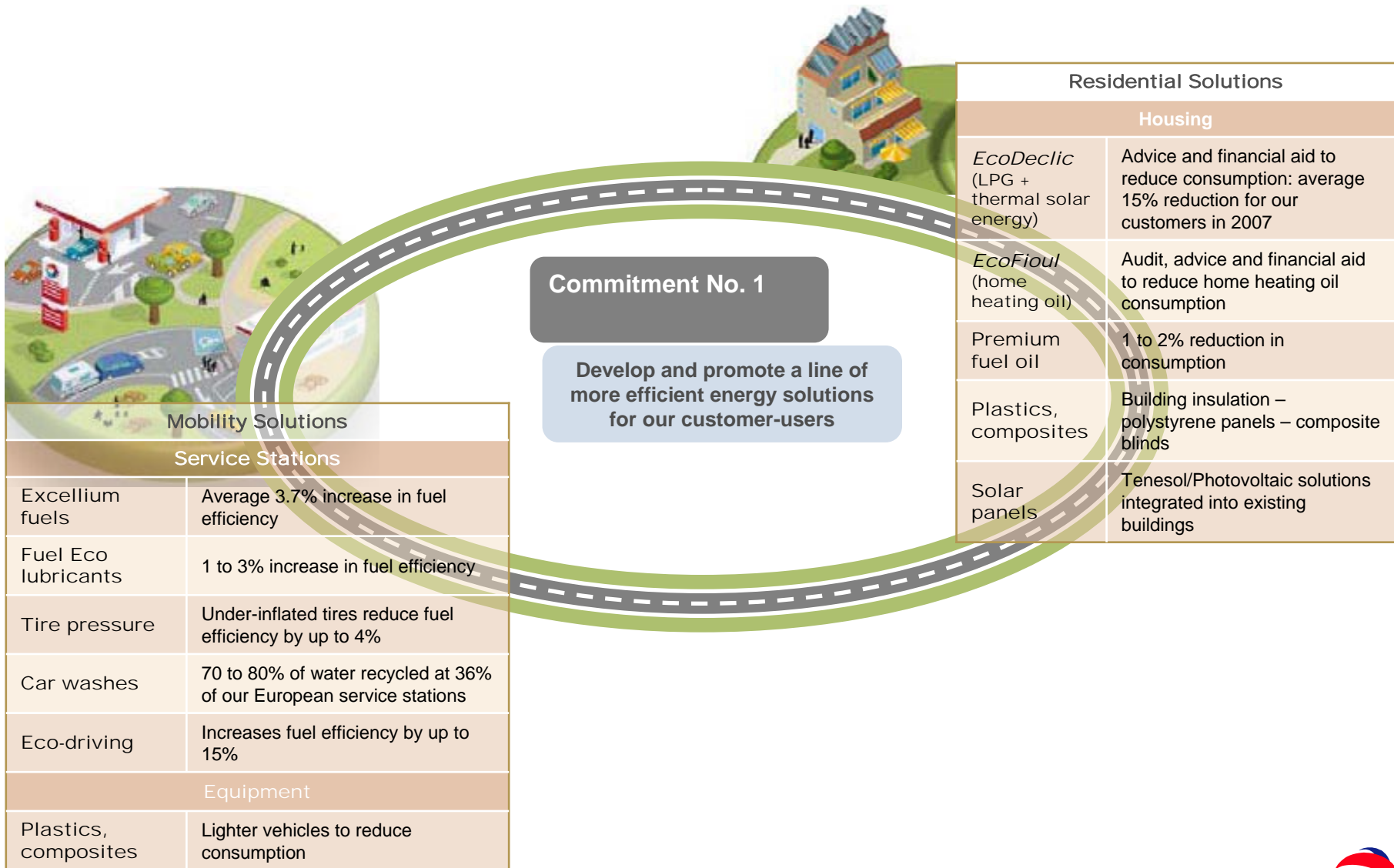
Greenhouse gas during utilization: what Total can do



Source: IPCC and IEA.



Solutions for consumers



Excellium fuels, an example of what Total's R&D can do

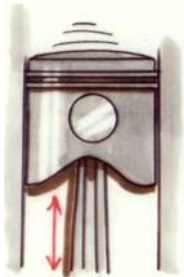
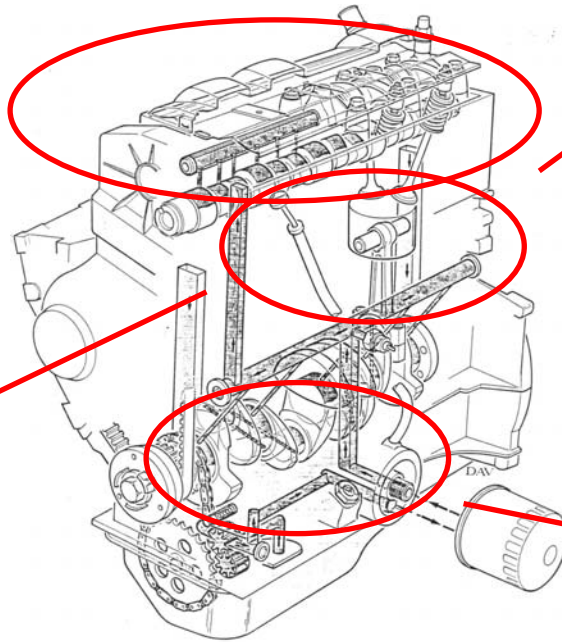
► Enhancing engine operation



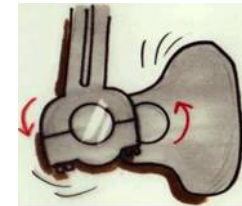
Reduce friction in the fuel injection system



Maintain and restore engine cleanliness



Reduce friction in piston rings/cylinder sleeves



Help to reduce the mechanical components of the lower part of the engine

Solutions for businesses and communities

Building Solutions

Premises

<i>EcoDeclic</i> (LPG + solar energy)	Advice and financial aid to reduce consumption by communities: average 15% reduction for our customers in 2007
<i>EcoFioul</i> (heating oil)	Audit, advice and financial aid to reduce heating oil consumption
Premium fuel oil	1 to 2% reduction in consumption
Adhesives	Materials for the construction of High Environmental Quality (HQE) buildings
Plastics, composites	Building insulation – polystyrene panels - composite blinds
Solar panels	Tenesol/Photovoltaic solutions integrated into existing buildings

Commitment No. 1

Develop and promote a line of more efficient energy solutions for our customer-users

Industrial Solutions

Industrial Facilities

Premium fuel oil	1 to 2% reduction in consumption
Biolubricants	Bio-derived (40-90%) + biodegradable
GP NOx	Up to 85% reduction in NOx in stack gas

Materials

Plastics	Use fewer resources in processes for processing industry customers, e.g. packaging
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Mobility Solutions

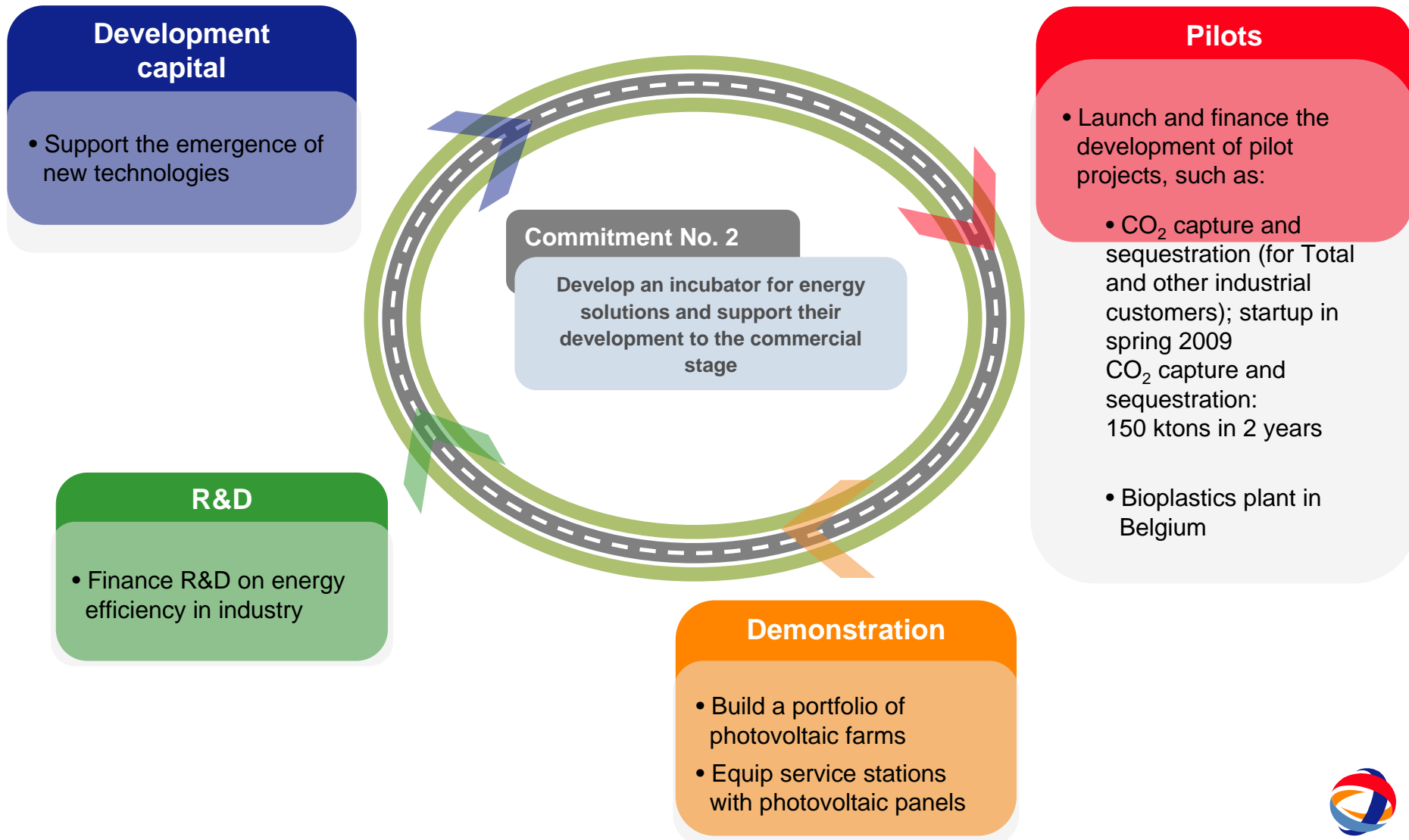
Service Stations

Excellium fuels	Average 3.7% increase in fuel efficiency
Tire pressure	Under-inflated tires reduce fuel efficiency by up to 4%
Eco driving	Increases fuel efficiency by up to 15%
Car washes	70 to 80% of water recycled at 36% of our European service stations
AdBlue	Up to 85% reduction in NOx

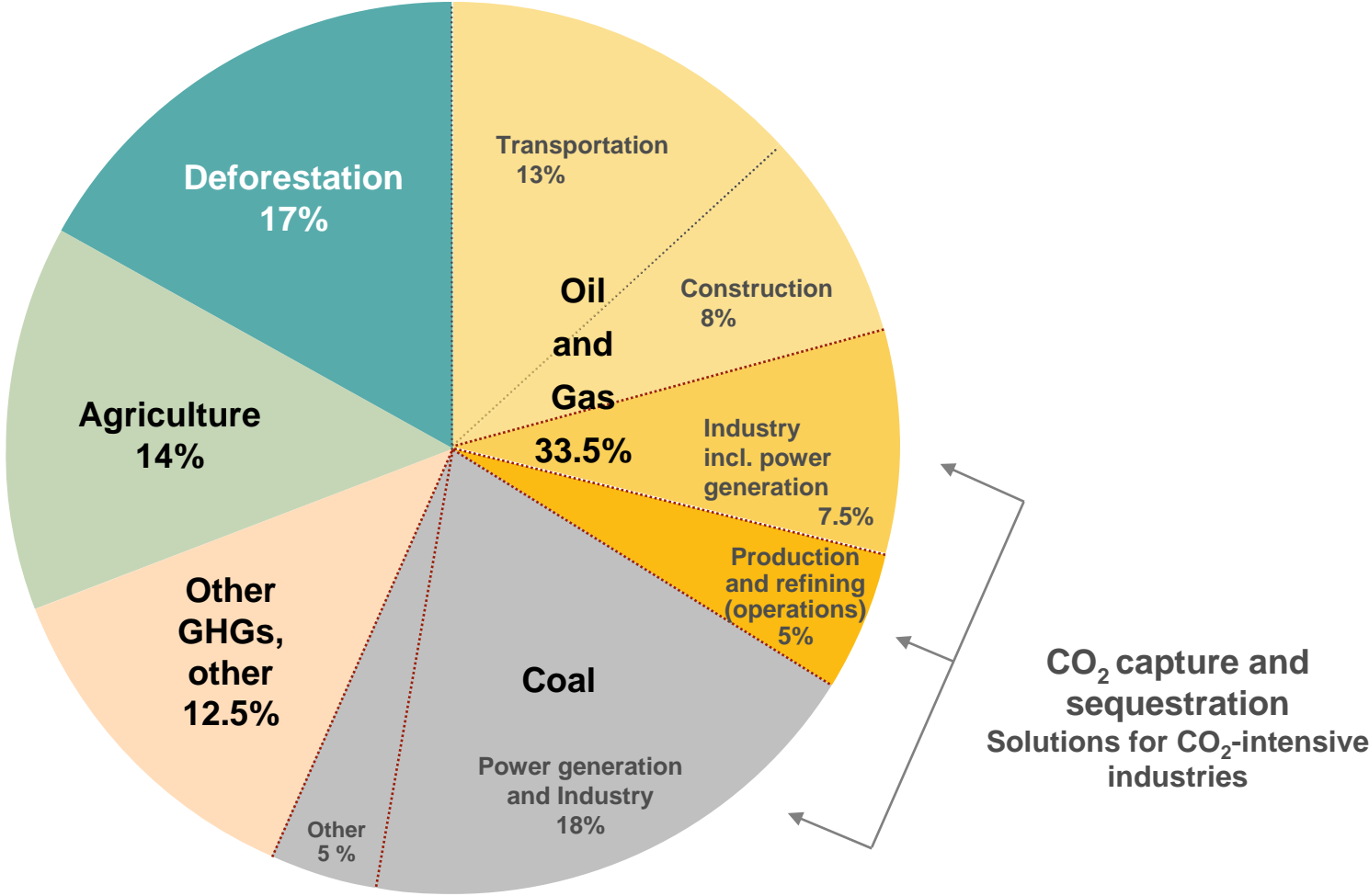
Corporate Fleets

GR cards	"Consume Less" program: Awareness of eco-driving, communication materials
Fuel Eco lubricants	1 to 3% increase in fuel efficiency for cars, 2.8% for trucks
Plastics, rubber	Lighter vehicles to reduce consumption

Innovation driving new, more acceptable, more diverse energy solutions



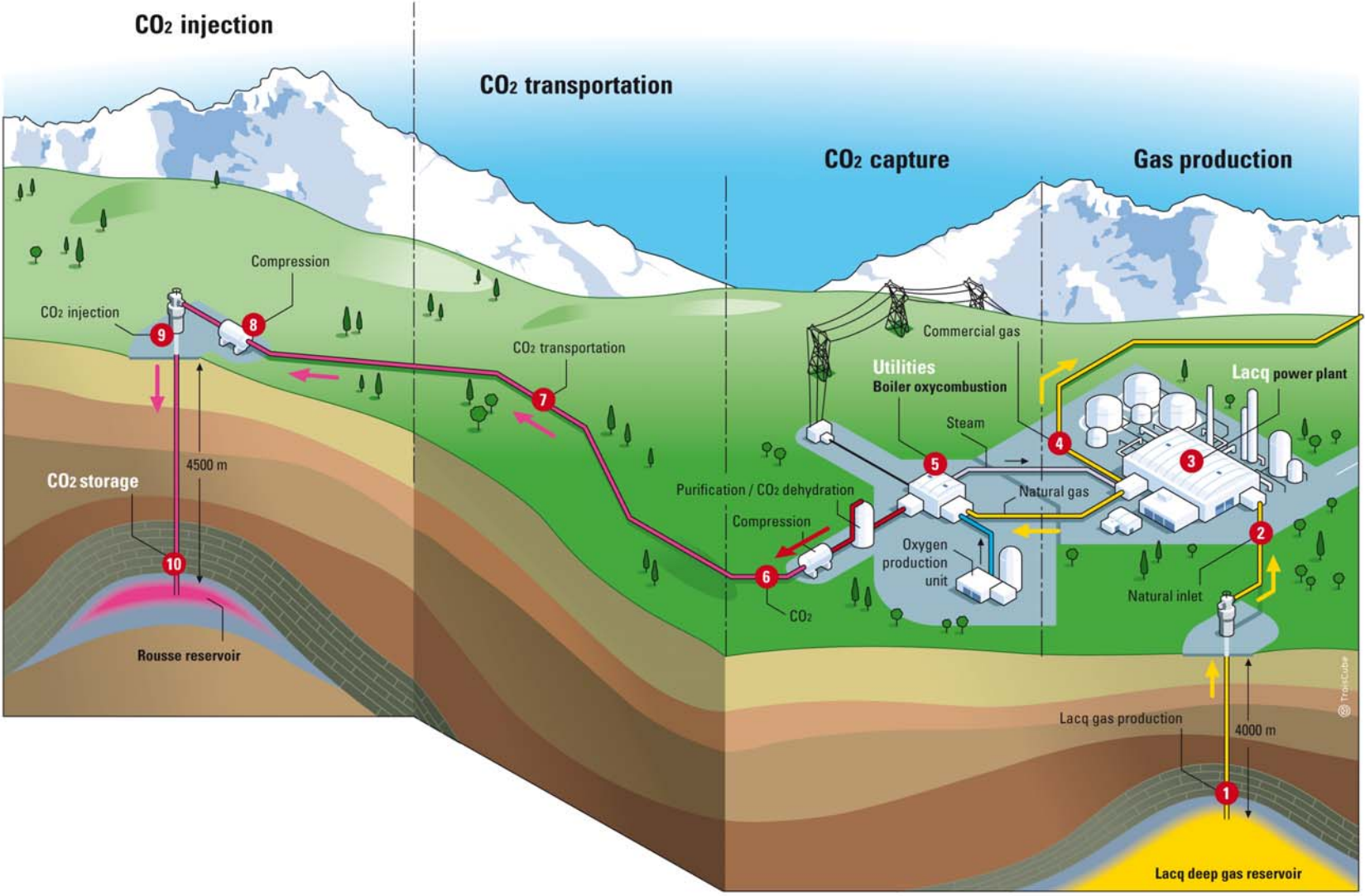
Greenhouse gas: solutions for carbon-intensive industries



Source: IPCC and IEA.



Lacq CO₂ pilot



Solutions for users

Two commitments

Commitment No. 1

Develop and promote a line of more efficient energy solutions for our customer-users

Commitment No. 2

Develop an incubator for energy solutions and support their development to the commercial stage

Six action plans

Broaden the line of products and services meeting Commitment No. 1

Enhance the performance of this line of products and services

Finance R&D on energy efficiency in industry

Support the emergence of new energy technologies

Launch and finance the development of pilot projects

Demonstrate the feasibility of new energy technologies

Expected outcomes

Energy use that:

- Is more efficient
- Is more resilient
- Has a reduced environmental impact

Energy supply that is:

- More innovative
- More diversified
- More acceptable